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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/555,048

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Yury Gogotsi

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EXAMINER

GRAY, JILL M

ART UNIT

PAPER NUMBER

1794

MAIL DATE

DELIVERY MODE

07/23/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/555,048	<b>Applicant(s)</b> GOGOTSI ET AL.	
	<b>Examiner</b> Jill Gray	<b>Art Unit</b> 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 14 April 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 5 is/are allowed.
- 6) ☒ Claim(s) 1,3,4,6 and 7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. Pursuant to the entry of the amendment of April 14, 2009, the status of the claims is as follows: Claim 2 has been cancelled. Claims 1 and 6 have been amended. Claims 1 and 3-7 are pending and currently under prosecution.

#### ***Response to Amendment***

2. The rejection of claim 1 under 35 U.S.C. 102(b) as being anticipated by European Patent Publication EP 0 730,044 (Utsumi) is moot in view of applicants' amendments.

#### ***Claim Rejections - 35 USC § 103***

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 1 and 3-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent Publication abstract, JP 06087657 (the abstract) in view of European Patent Publication EP 0 730 044 A2 (Utsumi), as applied above to claim 1.

The abstract teaches a composite material and composition comprising inorganic fiber reinforced ceramic composite having nitride based nanocomposite material. The nanocomposite material comprises nitride of aluminum and boron and has nitride particles dispersed in the nanocomposite. The abstract does not specifically teach a coating on the ceramic fibers.

Utsumi teaches a boron-aluminum-nitride coating, wherein said coating can be applied to ceramic substrates. It would have been obvious to modify the teachings of

Art Unit: 1794

the abstract by coating the fibers with a coating as taught by Utsumi with the reasonable expectation of enhancing the bond strength between the fibers and the matrix material.

Therefore, the combined teachings in the abstract and Utsumi would have rendered obvious the invention as claimed in present claims 1 and 3-5.

5. Claims 3 and 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over European Patent Publication EP 0 730 044A2 (Utsumi) in view of Japanese Patent Publication abstract, JP 06087657 (the abstract).

Utsumi is as set forth above and teaches that his coating can be applied to ceramic substrates such as silicon carbide, but does not specifically teach a fibrous substrate. The abstract is as set forth previously and teaches silicon carbide fibers reinforced in a ceramic composite material. It would have been obvious to one of ordinary skill in the art at the time the invention was made to coat the silicon carbide fibers with a boron-aluminum-nitride coating as taught by Utsumi with the reasonable expectation of enhancing bonding at the fiber matrix interface.

### ***Response to Arguments***

6. Applicant's arguments filed April 14, 2009 have been fully considered but they are not persuasive.

Applicants argue that concerning claim 1, the abstract lacks a teaching of a ceramic fiber having the claimed coating and the Utsumi publication does not cure this defect because it contains no teaching of at least one of aluminum nitride and aluminum oxynitride nanodispersed in boron nitride.

In this regard, there is no clear factual evidence on this record that the composition of Utsumi does not have aluminum nitride particles dispersed therein. In particular, Utsumi teaches the formation of a solid solution as well as the coating comprising crystals and fine particles. Note page 4 and 7. There is not clear evidence that some particles of at least aluminum nitride are not present.

Applicants argue that regarding claim 3 and 4, the abstract lacks a teaching of a coating on a fiber contained within a matrix as well as the identity of the coated fiber, and Utsumi does not cure these defects, further arguing that there is nothing in the Office Action other than mere allegation to support the examiner's position that it would have been obvious to coat the fibers.

In this regard, it is the examiner's position that the test for obviousness under 35 U.S.C. 103 is not the express suggestion of the claimed invention in any or all of the references, but what the references taken collectively would suggest. *In re Conrad*, 169 USPQ 170 (CCPA 1971). In this case the combined teachings would have suggested that the ceramic fiber taught by the abstract could be coated with a coating that can be applied to ceramic substrates. The skilled artisan would reasonably presume enhanced bond strength between the fibers and the matrix material.

Applicants argue that in regard to claims 6 and 7, the Utsumi publication is deficient in at least the lack of teaching of a dispersion of aluminum nitride or aluminum oxynitride in boron nitride and the abstract does not cure this defect.

In response thereto, the examiner's position is as set forth above and incorporated herein.

***Allowable Subject Matter***

7. Claim 5 is allowed over the prior art of record.

***Conclusion***

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jill Gray whose telephone number is 571-272-1524. The examiner can normally be reached on M-Th and alternate Fridays 8:00-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Keith Hendricks can be reached on 571-272-1401. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1794

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jill Gray/  
Primary Examiner  
Art Unit 1794

jmg